

What is claimed is:

1. A method of printing cartridge maintenance comprising:
determining a remaining useful life of a printing cartridge, and
refilling at least a portion of said printing cartridge if said remaining useful life is
above a predetermined threshold.
2. The method of claim 1, wherein refilling at least a portion of said printer
cartridge further comprises determining a current level of consumable substance
contained in said printing cartridge.
3. The method of claim 1, wherein determining remaining useful life of said
printing cartridge further comprises reading printing history data recorded in a memory
device of said printing cartridge.
4. The method of claim 3, wherein determining remaining useful life of said
printing cartridge further comprises comparing said printing history data to
predetermined values.
5. The method of claim 3, further comprising recording any amount of consumable
substance added to the printing cartridge in said memory device.
6. The method of claim 5, further comprising reading customer identification
information recorded on said printing cartridge.
7. The method of claim 3, further comprising replacing or resetting said memory
device after reading said printing history data.
8. The method of claim 1, further comprising preventing the refill of said printing
cartridge if said remaining useful life is less than said predetermined threshold.

9. The method of claim 1, further comprising reconditioning said printing cartridge.
10. The method of claim 9, wherein said reconditioning comprises emptying or cleaning a collection chamber of said printing cartridge.
11. A refilling system for printing cartridges including a computerized filling station comprising:
 - a refill receptacle configured to receive a printing cartridge;
 - a supply of material which is consumed during operation of said printing cartridge, said supply being connected to said refill receptacle; and
 - a controller for reading data recorded on said printing cartridge and for selectively refilling at least a portion of said printing cartridge in response to said recorded data.
12. The refilling system of claim 11, further comprising a printing cartridge with data recorded thereon coupled to said refill receptacle, and wherein said computerized filling station only refills at least a portion of said printing cartridge if said computerized filling station reads data recorded on said printing cartridge indicating remaining useful life of said printing cartridge.
13. A device refilling system comprising:
 - a computerized filling station having a delivery port configured to connect to a printing cartridge, the computerized filling station including electronic instructions to: read printing cartridge history data, determine remaining useful life of said printing cartridge, and, if remaining useful life of said printing cartridge is determined, refill at least a portion of said printing cartridge via said delivery port.
14. The refilling station of claim 13, further comprising a printing cartridge having a non-volatile memory containing print history data coupled to said refilling station.
15. The refilling station of claim 14 further comprising a refilling station interface for retrieving print history data contained in said non-volatile memory.

16. The refilling system of claim 14, wherein said printing cartridge is an inkjet printer cartridge.

17. The refilling system of claim 14, wherein said printing cartridge is a toner cartridge.

18. The refilling station of claim 13, further comprising electronic instructions to determine the amount of a consumable substance contained in said printing cartridge.

19. The refilling system of claim 18, further comprising a consumable substance gauge.

20. A device refilling system comprising:
a printing cartridge for containing a supply of consumable substance;
a memory device incorporated with said cartridge for recording a printing history of said cartridge; and
a refilling station for reading information recorded on said memory device and refilling said cartridge.

21. The system of claim 20, wherein said memory device comprises a non-volatile memory chip readable by a computer.

22. The system of claim 21, wherein said memory device comprises an RFID having an antenna for communication with a transmitter of a printing device or said refilling station.

23. The system of claim 21 wherein said refilling station includes said computer for reading said printing history of said memory device and for determining a remaining useful life of the cartridge.

24. The system of claim 23, wherein said computer compares said printing history to one or more predetermined useful life metrics.

25. The system of claim 23, wherein said refilling station prevents refilling of said cartridge if said computer determines said cartridge has no remaining useful life.

26. The system of claim 23, wherein said refilling station further comprises a supply of consumable substance.

27. The system of claim 26, wherein said filling station further comprises a consumable substance delivery port for refilling said cartridge.

28. The system of claim 27, wherein said cartridge further comprises a consumable substance refill port configured for engagement with said substance delivery port for receiving consumable substance from said refilling station.

29. The system of claim 28, wherein said cartridge further comprises an inkjet cartridge.

30. The system of claim 28, wherein said cartridge further comprises a toner cartridge.

31. The system of claim 30, wherein said toner cartridge is a laser printer toner cartridge or a copier toner cartridge.

32. The system of claim 20, wherein said printing history comprises one or more of: printing cartridge use time, quantity of consumable substance delivered, number of pages produced, number of pixels printed, number of cleaning cycles performed, number of calibrations cycles performed, types of jobs printed, age of printing cartridge from manufacture date; and cartridge time above a specified temperature.

33. The refilling station of claim 20, further comprising a consumable substance gauge for measuring the amount of consumable substance in said printer cartridge.
34. A method of refilling a printing cartridge comprising the steps of:
providing a refill station having a cartridge receptacle and a delivery port configured to engage said cartridge when said cartridge is removed from said printing device;
reading usage information to said refill station when said cartridge is mated to said cartridge receptacle;
and replenishing a substance to said cartridge by said refill station if said usage information indicates said cartridge has not been used beyond a useful operational life of said cartridge.
35. The method of claim 34, further comprising:
recording to said cartridge at the time of refill the amount of said substance delivered.
36. The method of claim 34, further comprising:
providing a database writable by said refill station;
receiving a customer identifier by said refill station;
recording at the time of refill said customer identifier to said database; and
recording at the time of replenishment to said database the amount of said substance refilled.
37. The method of claim 34, further comprising:
providing a user interface whereby a state of said printing device may be communicated to an operator; and
indicating by said interface that said cartridge may be refilled when said substance is exhausted from said cartridge and said useful operational life has not been expended.

38. The method of claim 34, further comprising:
automatically tracking usage of said cartridge; and
recording said usage to said cartridge as said cartridge is used.
39. The method of claim 38, further comprising:
reading said useful operational life from said cartridge, said useful operational life being written to said cartridge at the time of manufacture of said cartridge.
40. The method of claim 34, further comprising reconditioning said printing cartridge.
41. The method of claim 41, wherein said reconditioning comprises emptying or cleaning a collection chamber of said printing cartridge.
42. A printing cartridge refilling apparatus comprising:
a supply of consumable substance;
an interface configured for engagement with a used printing cartridge;
a delivery port through which at least a portion of said supply of consumable substance is ejected; and
a computer programmed to read printing cartridge history data.
43. A printing cartridge comprising:
a consumable substance container;
a memory device for containing printing history data; and
a refilling port in fluid communication with said consumable substance container, said refilling port selectively operational according to predetermined printing history data parameters.